CLAIMS

1. A method of operating a wireless receiver, comprising the steps of:

receiving a wireless communicated signal, wherein the signal comprises a first synchronization channel component;

correlating a synchronization channel value to the signal to produce a plurality of correlation samples in response to a correlation between the synchronization channel value and the signal;

comparing the plurality of correlation samples to a threshold;

storing as a first set of correlation samples selected ones of the plurality of correlation samples that exceed the threshold and are within a first time sample period, wherein each of the correlation samples in the first set has a corresponding sample time relative to the first time sample period; and

combining a second set of correlation samples with the first set of correlation samples.

2. The method of claim 1:

wherein the second set of correlation samples are within a second time sample period;

wherein each of the correlation samples in the second set has a corresponding sample time relative to the second time sample period; and

wherein the combining step comprises combining each sample in the second set of correlation samples with a respective sample in the first set of correlation samples such that each combined sample has a like sample time relative to the first and second time sample period.

3. The method of claim 2:

wherein the signal comprises a plurality of time slots, and wherein each of the plurality of time slots comprises a first synchronization channel component; and

wherein each of the first time sample period and the second time sample period has a duration equal to each of the plurality of time slots.

4. The method of claim 3:

wherein the plurality of correlation samples consists of an integer number N correlation samples;

wherein the selected ones of the plurality of correlation samples that exceed the threshold consist of an integer M selected ones of the plurality of correlation samples; and

wherein the threshold is at a level such that M is approximately one-half of N.

5. The method of claim 3:

wherein the plurality of correlation samples consists of an integer number N correlation samples;

wherein the selected ones of the plurality of correlation samples that exceed the threshold consist of an integer M selected ones of the plurality of correlation samples; and

wherein the threshold is at a level such that M is approximately one-tenth of N.

6. The method of claim 1:

wherein the plurality of correlation samples consists of an integer number N correlation samples;

wherein the selected ones of the plurality of correlation samples that exceed the threshold consist of an integer M selected ones of the plurality of correlation samples; and

wherein the threshold is at a level such that M is approximately one-half of N.

7. The method of claim 1:

wherein the plurality of correlation samples consists of an integer number N correlation samples;

wherein the selected ones of the plurality of correlation samples that exceed the threshold consist of an integer M selected ones of the plurality of correlation samples; and

wherein the threshold is at a level such that M is approximately one-tenth of N.

8. The method of claim 1:

wherein the plurality of correlation samples consists of an integer number N correlation samples;

wherein the selected ones of the plurality of correlation samples that exceed the threshold consist of an integer M selected ones of the plurality of correlation samples; and

wherein the threshold is at a level such that M is less than N.

9. The method of claim 1 wherein the step of combining comprises forming a sum by adding the first set to the second set.

10. The method of claim 9 wherein the step of combining further comprises diving the sum by two.

11. The method of claim 1 wherein the step of combining comprises forming a scaled average with the first set and the second set.

12. The method of claim 1 wherein the step of combining comprises forming a single pole average with the first set and the second set.

13. The method of claim 1 wherein each of the plurality of correlation samples comprises an energy measure of a result of the step of correlating a first synchronization channel value to the signal.

14. The method of claim 1:

wherein the step of combining a second set of correlation samples with the first set of correlation samples produces a plurality of combined samples; and

further comprising the steps of:

determining a peak value in the plurality of combined samples; and

determining a time position of the peak value.

15. The method of claim 14:

wherein the signal further comprises a secondary synchronization channel component; and

further comprising, in response to the time position of the peak value, the step of correlating a plurality of comma free codes with the secondary synchronization code component.

16. The method of claim 1 wherein the wireless receiver comprises a user station wireless receiver.

17. The method of claim 1 wherein the step of receiving a wireless communicated signal comprises receiving a CDMA TDD wireless communicated signal.

18. The method of claim 1 wherein the step of receiving a wireless communicated signal comprises receiving a CDMA FDD wireless communicated signal.

19. The method of claim 1 and further comprising the steps of:

measuring a level of noise in the signal; and

setting the threshold in response to the level of noise.

20. The method of claim 1:

wherein the second set of correlation samples are within a second time sample period;

wherein each of the correlation samples in the second set has a corresponding sample time relative to the second time sample period;

wherein the combining step produces a plurality of combined samples and comprises combining each sample in the second set of correlation samples with a respective sample in the first set of correlation samples such that each combined sample has a like sample time relative to the first and second time sample period; and

further comprising the steps of:

determining a peak value in the plurality of combined samples; and

determining a time position of the peak value.

21. The method of claim 20:

wherein the signal further comprises a secondary synchronization channel component; and

further comprising, in response to the time position of the peak value, the step of acquiring the secondary synchronization channel component.

22. The method of claim 1:

wherein the threshold comprises a first threshold;

wherein the second set of correlation samples are within a second time sample period;

wherein each of the correlation samples in the second set has a corresponding sample time relative to the second time sample period;

wherein the combining step comprises combining each sample in the second set of correlation samples with a respective sample in the first set of correlation samples such that each combined sample has a like sample time relative to the first and second time sample period; and

further comprising the steps of:

forming an average sample set by comparing each of the plurality of combined samples to a second threshold, wherein the second threshold is different than the first threshold;

determining a peak value in the average sample set; and

determining a time position of the peak value.

23. The method of claim 1:

wherein the step of combining a second set of correlation samples with the first set of correlation samples forms an average sample set;

and further comprising combining additional sets of correlation samples with the average sample set, wherein each of the additional set of correlation samples has a corresponding sample time; and

wherein the combining step comprises combining each sample in each additional set of correlation samples with a respective sample in the average sample set such that each combined sample has a like sample time relative to the first time sample period.

24. The method of claim 23 and further comprising, after each step of combining an additional set of correlation samples with the average sample set, the steps of:

comparing each sample in the average sample set with a corresponding threshold and storing those samples in the average sample set that exceed the corresponding threshold;

determining a peak value among the stored samples; and

determining a time position of the peak value.

25. The method of claim 1 and further comprising storing a sample time position for each sample in the first set of correlation samples.

26. The method of claim 25:

wherein the second set of correlation samples are within a second time sample period;

wherein each of the correlation samples in the second set has a corresponding sample time relative to the second time sample period; and

wherein the combining step comprises, in response to the stored sample time positions, combining each sample in the second set of correlation samples with a respective sample in the first set of correlation samples such that each combined sample has a like sample time relative to the first and second time sample period.

27. The method of claim 26:

wherein the threshold comprises a first threshold;

and further comprising the step of storing additional time positions for any sample correlations in the second time sample period that exceed a second threshold, wherein the second threshold differs from the first threshold.

28. A wireless receiver, comprising:

circuitry for receiving a wireless communicated signal, wherein the signal comprises a first synchronization channel component;

circuitry for correlating a synchronization channel value to the signal to produce a plurality of correlation samples in response to a correlation between the synchronization channel value and the signal;

circuitry for comparing the plurality of correlation samples to a threshold;

circuitry for storing as a first set of correlation samples selected ones of the plurality of correlation samples that exceed the threshold and are within a first time sample period, wherein each of the correlation samples in the first set has a corresponding sample time relative to the first time sample period; and

circuitry for combining a second set of correlation samples with the first set of correlation samples.

29. The receiver of claim 28:

wherein the second set of correlation samples are within a second time sample period;

wherein each of the correlation samples in the second set has a corresponding sample time relative to the second time sample period; and

wherein the circuitry for combining comprises circuitry for combining each sample in the second set of correlation samples with a respective sample in the first set of correlation samples such that each combined sample has a like sample time relative to the first and second time sample period.

30. The receiver of claim 29:

wherein the signal comprises a plurality of time slots, and wherein each of the plurality of time slots comprises a first synchronization channel component; and

wherein each of the first time sample period and the second time sample period has a duration equal to each of the plurality of time slots.

31. The receiver of claim 28 wherein the circuitry for combining comprises circuitry for forming a sum by adding the first set to the second set.

32. The receiver of claim 31 wherein the circuitry for combining further comprises circuitry for diving the sum by two.

33. The receiver of claim 28 wherein the circuitry for combining comprises circuitry for forming a scaled average with the first set and the second set.

34. The receiver of claim 28 wherein the circuitry for combining comprises circuitry for forming a single pole average with the first set and the second set.

35. The receiver of claim 28 wherein each of the plurality of correlation samples comprises an energy measure of a result of the step of correlating a first synchronization channel value to the signal.

36. The receiver of claim 28:

wherein the circuitry for combining a second set of correlation samples with the first set of correlation samples produces a plurality of combined samples; and

further comprising:

circuitry for determining a peak value in the plurality of combined samples; and

circuitry for determining a time position of the peak value.

37. The receiver of claim 36:

wherein the signal further comprises a secondary synchronization channel component; and

further comprising, in response to the time position of the peak value, circuitry for correlating a plurality of comma free codes with the secondary synchronization code component.

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